

Learning Management Systems in the Work Environment:

*Practical considerations for the selection and
implementation of an e-Learning platform.*

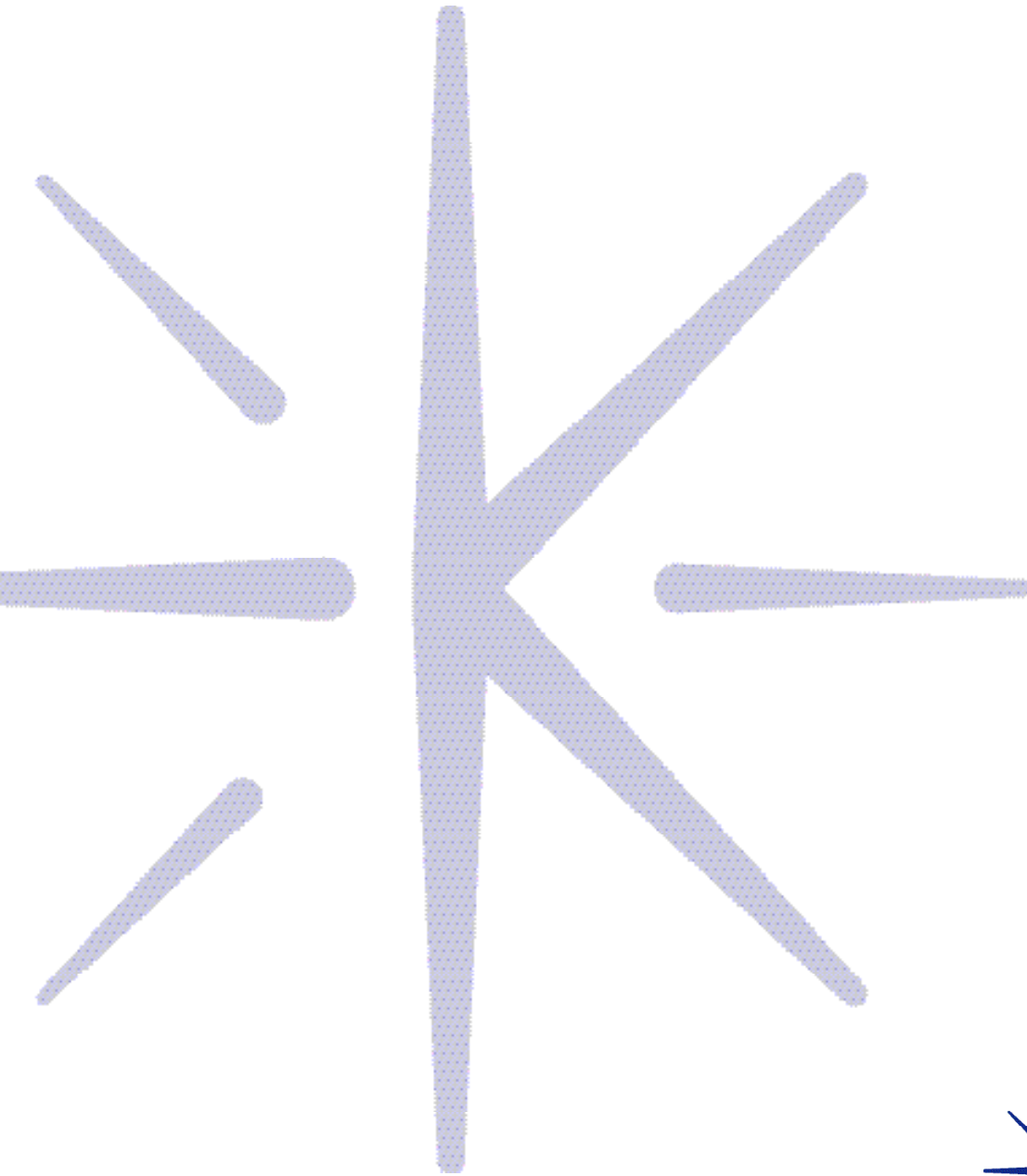


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I. Overview

Today's corporations know that knowledge is power. Knowledge gives companies the edge in any marketplace. In fact, a recent study found that 75% of organizations believe knowledge management plays a significant role in improving competitive advantage.*

To leverage their collective intelligence, companies are increasingly tied to their knowledge-based human capital—employee skills, innovative ideas, patent portfolios, and research and development. After making significant investments in systems and technology, companies must ensure that people are using them effectively—and that they're realizing ROI for both equipment and human capital.

Thus, many companies are turning to their training departments. While training used to be viewed as a relatively minor function, it now plays a much more strategic role. Rather than being an isolated event or series of static events, training is now part of on-going professional development—and it's being integrated at all levels of a company.

Education is the pathway to productivity: it moves knowledge from the people who have it to the people who need it. And it's how companies can get fewer people to complete more work. But how can companies make sure that their training is effective—for employees, administration, and even shareholders?

The key is the right partnership of strong, effective content and a practical, focused platform for the content. When these two elements work together, learners get the training they need to increase knowledge, develop new skills, and improve personal productivity—and the corporate training organization and the company as a whole get a manageable, measurable system that's capable of providing ROI for training.

*KPMG study

Training is Good for Business

When ASTD ranked firms according to how much they spent on training, those in the top half of the study group had an average total shareholder return (TSR) of 36.9 percent in the following year. The TSR for those in the bottom half was only 19.8 percent. By comparison, the S&P 500 had an annual weighted return of 25.5 percent during the same period. Translation: firms in the top half had a TSR that was 86 percent higher than firms in the bottom half, and 45 percent higher than the market average.

ASTD also measured average per employee expenditures on training, and it found that when compared to those in the bottom quarter, firms in the top quarter posted:

- 24 percent higher profit margins
- 218 percent higher income per employee

Keeping the Workforce Current

By 2020, 60% of jobs will require skills that only 20% of the workforce now possesses.* In response, some companies will simply lay off employees with outdated skills, then hire new ones with the necessary skills—a process that's both expensive and ineffective.

The cost of replacing an employee is estimated at approximately 1.5 times an employee's annual salary, which can translate into a significant expense for employers, especially when it comes to high-tech workers.

* According to a study by the Hudson Institute

II. Content—The Star of the Show

More and more companies are turning to e-Learning, because it delivers more training to more people for the fewest dollars. It's fast, convenient, and consistent. And it's also incredibly effective: some studies have shown that retention is up to 250 percent greater with e-Learning than with a solely classroom-based model.

But how do you ensure that you're providing e-Learning, not just "e-reading"? High-caliber content is the key—content with an instructional design that makes courses effective. As online training solutions are created for complex business skills such as management and leadership development, a content provider's instructional design becomes critical. Intelligent and efficient instructional design is crucial, because employees have to actually **use** the training for it to work.

The selection of courses is one of the most important steps in putting together a successful e-Learning program. The content must address the skills to be developed based on a company's business objectives. The choice is highly dependent on the learning and development organization understanding what the learner needs to know. Choices must also respect how the learners need to learn and accommodate the stage of learning that they are in. There are five stages of learning that a program needs to address:

- Initial Learning—new skills and concepts are presented to the learner for the first time.
- Continued Learning—the learner has a foundation of knowledge in the topic area and is extending it.
- Remedial learning—refresher learning.
- Upgrade learning—the learner is progressing from competence at an early level to competence at a higher level in the topic area.
- Transferred learning to new technology—the learner knows the concepts of the topic area and is transferring them to a different operational area. For example, an experienced database administrator who has been working with Sequel databases is now taking Oracle courses.

For any given business training need, the stages of learning may be different for different employees. Regardless of where an employee is on this continuum, the content needs to be engaging, easy to access, relevant, and tailored to his or her learning style.

*From the employee's perspective, there is a well-documented increase in earnings when they have the right educational credentials and skills. Employee loyalty is great for business—and it provides ROI that's recognized and rewarded by the stock market. Companies with highly committed employees tend to post sharply higher shareholder returns.**

**Watson Wyatt Worldwide study*

III. Selecting A Platform with the Right Connections

A platform is the “brains” behind an e-Learning operation. It’s a critical tool in the development of human capital, and it can elevate the status of the training function within the corporate enterprise.

A good platform connects:

- Employees to the content they need
- Training administrators to overall business goals
- Improved productivity to year-to-year business performance

Now we can turn to the management side of e-Learning platforms:

Connecting With Employees

The learner’s environment is important because courses must be used effectively in order to realize the full value of an investment. Without this, all the advanced human capital management and competency tracking capabilities are immaterial.

Also, poorly used content can lead to flawed or meaningless data being tracked, and errors in reporting and analysis. Ultimately, this misinformation can lead to faulty decision-making, and result in mistakes in program management.

To best serve learners, an e-Learning platform must allow them to do the following quickly and easily:

- Access the online learning site
- Locate the best or correct courses
- Access reference materials to supplement courses
- Keep track of where they are in various courses
- Complete assessments prior to starting courses so that they can target learning time most effectively

Connecting With Administrators

Over time, expectations of e-Learning platforms have grown from simply launching and playing content, to automating administrative reporting tasks—all the way to truly extending the learning process and environment for the student while improving the management practice for the training organization. Today’s platform often includes detailed tracking, skills assessment and management, and reporting options, and incorporates a high degree of customization.

When it comes to using an e-Learning platform, companies get out of it what they put into it. It can simply deploy content, playing it for learners—basically like a VCR—or it can be used as a tool for efficient e-Learning management. A good platform should focus on the student and also deliver five critical managerial functions to the program administrator: student management, content assignment, communication, tracking and reporting, and proprietary training development facilities. It should support course authoring so that companies can easily produce their own custom content, such as new employee training, new product training, proprietary manufacturing processes, and so on. Let’s take a closer look at each of these functions:

Student Management

- Create and issue access to the system
- Organize administrators and/or students into groups for reporting and content assignment purposes
- Provide courses using access rights and registration
- Manage all class-related resources, including classrooms and instructors
- Integrate appropriate support tools including exercises, reference materials, labs, tests, and opportunities to collaborate.

Content Assignment

- Arrange courses and events in catalogs that are intuitive and searchable.
- Target content to the correct individuals or groups
- Designate selected content as “required” learning; allow students to select other courses as they desire
- Create, edit, distribute, and deliver assessments
- Develop personalized learning paths
- Include learners’ job roles and functions
- Deliver online, instructor-led courses in synchronous or asynchronous modes, including course setup, syllabus display, and registration and tracking

Communication

- Enable communication between administrators and learners
- Search and identify learners and deliver targeted courses, news, references, and other information to continually engage them
- Supplement courses by integrating specific learning references into the platform and allowing access to external resources

Tracking and Reporting

- Track and report on student progress and activity
- Track and report professional development progress against a predefined set of training goals
- Track and report that mandated (compliance) training has been successfully deployed
- Determine whether knowledge has been retained after training

Proprietary Training Development

- Develop new (proprietary) courses yourself or through a third party
- Use templates to speed development
- Conform to industry standards to improve compatibility between the course and the platform
- Integrate proprietary courses seamlessly into the learning environment

Connecting With Companies

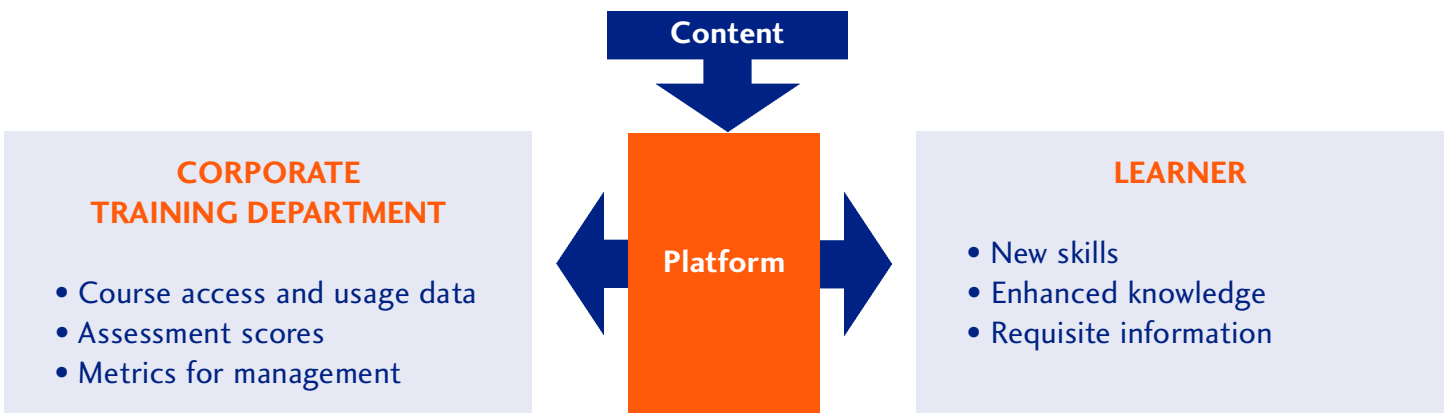
Management is much more than simple reporting and measurement—it's about using that information to evaluate and make decisions about programs. A good platform provides methods to closely monitor whether the right employees are taking

the right courses—and whether they're getting the information they need from them. For example, pre-assessments can tell learners where they need to start in the program: maybe they don't need the introductory level course, and can skip to the second or third level. This saves employees time and effort—and keeps them from losing interest in a program that's not addressing their information needs, learning style, and learning stage.

True learning management means adapting the program to keep the returns high, the content fresh, and the users interested. If employees aren't enrolling in some courses, companies should determine why. Are the courses hard to find? The platform may need a better cataloging system or search function. Do the courses cover information that employees feel they already know? Companies can replace the courses with newer or more relevant content.

On the other hand, if employees are flocking to certain e-Learning courses, it may be a sign that the topics are not being covered properly in other training venues. In this case, your platform can be a tool to help the company evaluate its overall training program.

Used correctly, a good platform can help companies ensure that learning evolves, and that it happens ahead of the curve—before the content gets stale, before users are overwhelmed, and before the business advantage has been lost.



IV. Applying Instructional Design to the Platform Maximizes Value

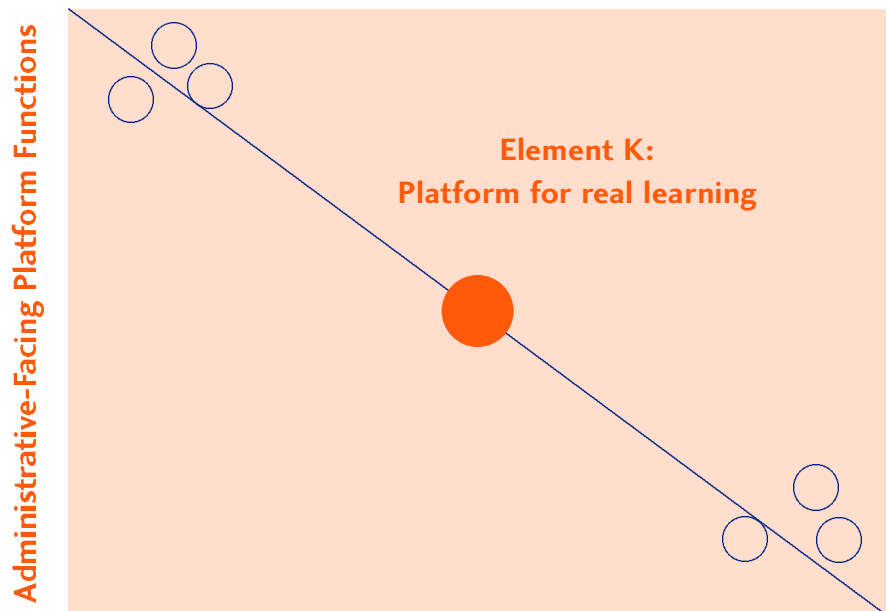
Both the content and the platform selected for an online learning program should be rooted in a shared respect for the learner. Selecting a platform where instructional design principles are applied strengthens a training and development program, and makes it more likely to provide a true return for the investment made because:

1. The employee learning environment (the real substance of the program) is optimized.
2. The program's management process is attuned to the actual learning process.

When considering a platform, companies should beware of organizations at either end of the spectrum: those that only develop content, and offer ineffective, plug-and-play platforms options; and those that have high-end, feature-packed, “bells-and-whistles” LMS (learning management system) offerings—and no involvement with the content.

This graphic details the continuum of possibilities—from learner-facing to administrative-facing functions. KnowledgeHub, Element K's platform, offers the optimal combination of both, with key features for both learners and administrators.

- HRIS integration capability
- Professional Development paths
- Content authoring
- Content management
- Student communications
- Reporting
- Tracking



Student-Facing Platform Functions

- Course catalog presentation
- Course presentation/initiation
- Pre-assessments and Post-assessments
- Superior learning environment
- Reference libraries
- Progress tracking
- Offline play capability

It's important to find providers that offer a platform that combines the instructional design that learners need with the administrative features that the training department needs. For example, Element K incorporates three instructional design principles into its KnowledgeHub platform:

INSTRUCTIONAL DESIGN	PRINCIPLE	PLATFORM
<ul style="list-style-type: none"> • Based on performance outcome—focusing on job tasks, not features • Driven by learner needs • Defined by performance-based learning objectives • Supportive of methods and objectives • Able to assess learners' mastery of objectives 	<p>Results-Oriented</p>	<ul style="list-style-type: none"> • Make reporting and proving ROI faster, easier, and more accurate • Incorporate virtual labs for hands-on experience • Provide online reference libraries • Allow for messaging from the administrator • Enable fast and easy log-in for administrators and students • Deliver content that can be directed to the individuals or groups who need it
<ul style="list-style-type: none"> • Offer choices of how and what to learn—with multiple learning modalities and a variety of courses • Spend 70% or more of curriculum time in overt learning activities • Demo, discover, practice, and establish value • Provide meaningful guided and unguided activities • Use simulations or real-time experiences • Vary complexity as courses progress • Give feedback through advancing or error checking • Present meaningful examples and analogies 	<p>Learner-Centric</p>	<ul style="list-style-type: none"> • Offer instructor-led online or self-paced tutorials • Allow various language settings • Let users create their own "My Training" pages • Facilities to build Professional Development paths that integrate various learning objects
<ul style="list-style-type: none"> • Focus on what employees need to learn • Establish and prove relevance • Build learner confidence • Provide opportunities for satisfaction 	<p>Engaging</p>	<ul style="list-style-type: none"> • Enable quick access to content • Provide an easy way to organize • Provide clear, easy-to-use, searchable catalogs

Companies must consider the characteristics that are important to learners and to administrators, and ensure that a solution's instructional design and platform work together to deliver them.

V. Technical Considerations

Once a company has decided that it needs a platform, and determined which program features are needed, there are five remaining technical considerations:

- Hosting
- Architecture
- Integration
- Industry Standards
- Security

Hosting

One of the first decisions is whether a company should deploy an LMS itself, or select a fully hosted platform. A hosted platform is accessed from an Application Service Provider (ASP) through the Internet, rather than installed on local hardware. Some of the advantages of an Internet-hosted platform are:

- Lowers hardware, software, and licensing costs.
- Allows for continuous content and feature updates with no local intervention.
- Enables faster implementation.
- Requires little or no internal technical support or development.

Companies may choose to license software and implement it on their own to have more opportunities for customization. They may want to deploy the LMS inside firewalls to reduce perceived security threats, although hosted solutions are increasingly more secure.

Another consideration is bandwidth. Companies need to evaluate how administrators and learners will access the system, and whether the corporate network can handle the increased traffic. A platform may require client downloads or offer direct browser access. In general, bandwidth constraints are not an issue with fully hosted solutions.

Architecture

When it comes to the architecture of the platform or LMS, it must be:

- **Flexible:** create a unique look and feel for the e-Learning solution, and present content that's dynamic and customized to the user.
- **Extensible:** easily add new functions and features as they become available—for example, HRIS or ERP connectivity. The platform should offer ERP integration tools, including database mapping utilities, automated update routines, and guidelines to create custom interfaces to the ERP application.
- **Scalable:** add to the system without compromising its performance—or having to switch to a new one.

These qualities are generally built-in with ASP systems.

Integration

For maximum effectiveness, a platform should be integrated into existing applications and data systems. A company's unique business needs may require that the platform be customized to support specific requirements—and these should be addressed prior to deployment. In fact, integration is an important factor in both the selection and deployment of a platform. Integration typically happens through customization, application interfaces, and data feeds and extracts.

Customization

Tailor the platform to meet specific requirements:

- **User interface.** The platform should allow for updates to its look and feel—from adding a company logo to developing a branded university. The student should be able to customize the environment by book marking courses and references.
- **Custom fields.** It should be easy to add custom fields to track additional learner information, and include them in exports or platform-generated reports.
- **Reporting.** Administrators should be able to develop custom reports, produce output in several formats, and export data to different file types.

Application Interfaces

Most companies have significant investments in HR systems and third-party applications. To function seamlessly, a platform must integrate into existing application frameworks. There are several forms of application integration that a platform should supply:

- **Third-party integration.**

A flexible platform supports third-party applications, and allows for add-ons with search engines, online books, commerce engines, and other features. The goal is to be able to provide the learner with a rich, fresh, and stimulating learning environment.

- **Single login.** Many HR systems allow employees to login and view benefits, salary, training, and other information—these should also link directly to the platform, so that employees don't have to login again.

- **User interface flow.** The platform should be easy for employees to use, and it should have a look that's consistent with other applications, so that employees don't feel like they're bouncing between separate programs.

Data Integration

The key to a successful platform is the ability to get information into and out of it. To do this effectively, the platform must support:

- **Student registration.** As new employees are hired and registered in an HR system, the platform should create “new students” automatically and link back to new employees' HR records. When employees leave, their student ID and training records should be deleted.

- **Data exports.** Training data stored in the platform must be made available to HR systems and other third-party applications, so the platform needs to be capable of both real-time and batch interfaces to share this data.

- **Data imports.** The platform should be able to import employee information for initial enrollment, as well as skills and development plans.

Industry Standards

The platform should comply with emerging industry standards so that new courses, learning objects, and other materials can be integrated

easily. If a company is “trapped” on a vendor's proprietary, non-standard system, it may not be able to take advantage of new content or tools developed by other suppliers. This can hurt a company's ability to grow and scale its program, and cost a great deal of time and money to customize the materials to force fit them into a non-standard platform. Some of the critical standards to ask potential platform providers about include:

- **Aviation Industry Computer-based training Committee (AICC)**—learning objects should be designed to AICC standards.

- **Sharable Content Object Reference Model (SCORM)**—this set of technical specifications enables sharable, durable, and reusable Web-based learning content, and it's becoming the accepted model in the industry.

- **IMS**—the platform provider should be part of the IMS Developer Network, and provide IMS-compliant materials.

Security

Security is a priority in any data system with employee information and proprietary content. A platform must protect data, since a security breach could put sensitive data at risk. Security measures usually include passwords and encryption.

Password security provides users with unique IDs and passwords. To be effective, the IDs and passwords themselves—and their distribution—must be secure.

Encryption keys are codes that both the sender and receiver need in order to communicate. The encryption key reduces the risk of a third party intercepting sensitive information. Most browsers employ Secure Socket Layers (SSL) for encryption—it's the standard for secure information exchange over the Internet.

In addition, there should be administrative restrictions, so that users can only access the information that's appropriate to their levels. The platform should keep activity logs that can be reviewed regularly. Also, companies should consider restricting IP addresses or placing proprietary content inside the corporate firewall.

VI. Conclusions

The platform (or learning management system) is at the core of any program seeking to advance employee skills through ongoing training and development. In a few short years, the expectations of the platform have grown exponentially for the learner, the training administrator, and the sponsoring organization. This has made the evaluation and selection of a platform a complex process.

In order to simplify this process and improve the probability of a positive outcome, the decision-maker should consider the following questions:

- What are the program objectives for the individual learners, training administrators, and sponsoring organization?
- How will progress be measured, tracked, and reported?
- What learning content will be required for each learner, now and in the future?
- What support tools (labs, references, collaboration, etc.) will be required by the learners?
- How well are the various components integrated?
- How well does the platform support a rigorous instructional design model? Does the platform allow full exploitation of the qualities of the content?

- How well does the platform manage professional development objectives including specified learning paths and bricks-and-mortar events?
- How well does the platform support administrative objectives?
- Will the platform integrate with existing HRIS and ERP systems, as well as the corporate intranet?
- Is the platform compliant with common standards?
- Is the platform secure?

A qualified platform vendor will be able to assist in defining program objectives, and can provide solutions that meet the program needs. An optimal platform vendor will provide a singular point of management over all of the components and a demonstrated capability to provide seamless integration for the student and administrative environments.

During the final phase of selecting a platform, a vendor also should be willing to help you protect your investment by helping to incorporate an evaluation process for diagnosing the platform's performance throughout its lifecycle.

VII. Additional Resources

Please consult the following websites for additional information:

www.elementk.com

www.asted.org

www.clomedia.com

www.eduventures.com

www.brandon-hall.com

Standards:

- SCORM – www.adlnet.org
- AICC – www.aicc.org
- IMS – www.imsproject.org

